

Steps for Action

1. Understand and Value the Black Sea

Encourage schools, museums, and communities to discover the Black Sea's ecosystems, cultural heritage, and importance to local well-being. Awareness grows through hands-on learning, field activities, and storytelling that connect people with their sea.

2. Integrate Black Sea Literacy into Education

Translate and adapt BSL materials into regional languages, and embed them in school programs with support from ministries of education. Empower students through project-based learning and initiatives such as the European Blue Schools Network, coordinated by EMSEA within the EU4Ocean Coalition.

3. Strengthen Collaboration

Encourage cooperation among educators, scientists, NGOs, and communities through existing Ocean Literacy networks and regional partnerships. Initiatives like the BSL Network and EMSEA offer opportunities to share knowledge and develop joint projects with long-term regional benefits.

4. Engage Citizens in Action

Encourage public participation in citizen science, coastal cleanups, and community projects. Small actions — reducing waste, choosing sustainable seafood, and raising awareness — can make a real difference.

5. Support Policy and Innovation

Align BSL efforts with international frameworks such as the EU4Ocean Coalition and the UN Sustainable Development Goals. Strengthen policies, inspire innovation, and connect BSL to sustainable blue economy initiatives.

6. Empower the Next Generation

Involve young people as active leaders in marine stewardship. By adopting the "Find the Blue challenge" and joining the Blue Schools Network, Black Sea schools can nurture informed, engaged, and inspired ambassadors for a sustainable future.

Join the Black Sea Literacy Network

The Black Sea Literacy Network, established through the BRIDGE-BS project and facilitated by EMSEA, connects educators, researchers, and ocean advocates across the region. By becoming an EMSEA Black Sea member, you can contribute to joint activities, share good practices, and help expand Ocean Literacy throughout the Black Sea. Together, we can ensure this shared sea thrives for generations to come.

Join EMSEA Black Sea Network
Free membership for educators, researchers, and ocean advocates in the region



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Authorship and Acknowledgments

This leaflet was co-created by members of the Black Sea Literacy Network under the BRIDGE-BS project, facilitated by EMSEA.

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BLACK SEA LITERACY

Introduction

The Black Sea, a unique marine ecosystem at the crossroads of Europe and Asia, shapes the lives, cultures and economies of millions of people. Its waters connect diverse nations and histories, supporting communities, fisheries, and trade across the region. Yet this unique sea faces growing pressures from pollution, overfishing, and the loss of natural habitats.

To address these challenges, we need to understand how people and the sea are connected. The concept of Black Sea Literacy (BSL) – rooted in Ocean Literacy – promotes knowledge, awareness, and care for this shared environment. It helps citizens, educators, and policymakers see how everyday choices influence the sea's health and resilience. Advancing BSL is central to fostering informed decision-making and responsible stewardship.

The Black Sea Literacy Network, established within the Horizon Europe BRIDGE-BS project and facilitated by EMSEA, unites these efforts. It brings together educators, scientists, and communities to share knowledge, build partnerships, and inspire action. This leaflet introduces the seven principles of Black Sea Literacy, inviting everyone to help protect biodiversity, sustain livelihoods, and celebrate the region's cultural and natural heritage for generations to come.



The seven essential principles of Black Sea Literacy

Principle

1 The Black Sea is a unique and semi-enclosed sea connected to the global ocean.

The Black Sea, although semi-enclosed, is an essential part of the global ocean system, connected to the Mediterranean via the Bosphorus and to the Atlantic through the Strait of Gibraltar. It has a unique geological and hydrological structure, including a narrow continental shelf, a deep central basin, and the world's largest anoxic water mass, with oxygen-rich surface waters permanently separated from hydrogen sulfide-rich deep layers. Its semi-enclosed nature and limited water exchange make the Black Sea particularly vulnerable to environmental pressures, including overfishing and pollution.

Principle

2 The Black Sea shapes the culture, economy, and ecosystems of the region.

The Black Sea influences the livelihoods and traditions of millions of people in its coastal countries. Its rich ecosystems provide essential services that support fisheries, recreation, and tourism. The sea has historically shaped cultural identities, supporting ancient civilizations and fostering maritime trade. The basin's complex geological history, including its dynamic salinity regimes, has shaped both habitats and human settlements. Furthermore, while the abyssal part of the seafloor preserves organic material, creating a natural laboratory for researching past climates and ecosystems, unique seafloor features such as submarine canyons, cold seeps and mud volcanoes support diverse habitats and natural resources. Also, port cities like Constanta, Varna, Odessa, and Batumi are key hubs of economic activity. The region's cultural and economic significance highlights the need for sustainable policies that balance development and nature conservation.

Principle

3 The Black Sea regulates regional climate and weather patterns.

The Black Sea acts as a climate moderator, absorbing heat in summer and releasing it in winter. This thermal inertia leads to milder coastal winters and cooler summers. The sea also provides atmospheric moisture, influencing rainfall and supporting agriculture and freshwater resources. However, long-term climate shifts, including temperature increases and extreme weather events, pose significant challenges. Adaptation strategies such as coastal zone management and improved forecasting systems are critical.

Principle

4 The Black Sea sustains life in the region.

The Black Sea plays a vital role in supporting life across the region by delivering essential ecosystem services. Seasonal blooms of phytoplankton produce oxygen and absorb carbon dioxide, contributing to atmospheric regulation and long-term carbon storage. These microscopic organisms also form the foundation of the marine food web, sustaining biodiversity and key fisheries. Coastal habitats such as wetlands and seagrass meadow beds, although limited in extent, help stabilize shorelines, reduce storm impacts, and filter pollutants. Seagrass meadows also contribute to oxygen production, blue carbon storage, and erosion prevention.

Principle

5 The Black Sea supports great diversity of life and ecosystems.

With diverse habitats and endemic life forms, including dolphins, sturgeons, and seagrass meadows, the Black Sea hosts species found nowhere else. Its unique salinity regimes and semi-enclosed nature have shaped distinct ecological communities. The Black Sea is home to critically endangered sturgeons such as *Acipenser gueldenstaedtii* and *Huso huso*, and marine mammals like the Black Sea bottlenose dolphin (*Tursiops truncatus ponticus*) and the harbour porpoise (*Phocoena phocoena* ssp. *relicta*). Below 80-150 metres, depending on the location, the Black Sea becomes anoxic where only specially adapted species survive with little to no oxygen. These organisms, some recently discovered, tolerate varied oxygen levels and may include yet unknown species.

Principle

6 The Black Sea and humans are inextricably interconnected.

The Black Sea sustains human life, but also bears the consequences of our actions. The runoff from agriculture, industrial waste, and untreated sewage has fueled eutrophication, causing large-scale algal blooms and persistent dead zones in the coastal waters, especially during the 1990s before fertilizer use declined dramatically. Overfishing and illegal practices have destabilized food webs, while invasive species, most notably the comb jelly *Mnemiopsis leidyi* and the rapa whelk *Rapana venosa*, have dramatically altered marine ecosystems, leading to biodiversity loss and economic damage to fisheries. Coastal development further disturbs wetlands and seagrass habitats that once supported shoreline stability and water quality. Meanwhile, changing temperature and salinity regimes driven by climate change are shifting species distributions and disrupting natural cycles. The Black Sea's ecological and economic benefits can be secured for future generations through regional cooperation among governments, businesses, scientists, and local communities.

Principle

7 Despite extensive studies, much about the Black Sea remains unknown.

Although the Black Sea has been studied for decades, much of its biodiversity and deep-sea systems remain unexplored. Ongoing research into anoxic zones, benthic life, and microbial communities continues to reveal new ecological insights, while marine archaeology uncovers ancient civilizations and shipwrecks that enrich our understanding of the region's past. Sustained investment in science – together with public engagement and effective policy, – is essential to safeguarding the Black Sea, a shared resource that depends on all of us to protect it.

Epilogue: Building Black Sea Literacy Together

The Black Sea is more than just a body of water — it is a natural laboratory as well as a shared heritage that connects the region's cultures, economies, and ecosystems. Protecting it requires collective responsibility, knowledge, and action. By advancing Black Sea Literacy (BSL), we can empower citizens, educators, and future generations to become stewards of this unique sea.

